

CLAIMS

1. A cathode ray tube comprising:

5 a glass bulb that is formed by joining a substantially rectangular panel with a funnel that houses an electron gun in a neck thereof; and

10 an internal magnetic shield that is substantially in a shape of a hollow truncated pyramid which is rectangular in a cross section, the internal magnetic shield being housed in the glass bulb such that a small diameter opening of the internal magnetic shield faces toward the electron gun, wherein

15 in the internal magnetic shield, a first short edge and a second short edge are arranged to face each other across the small diameter opening, and each short edge is in a shape of a valley that drops toward the panel, and a first long edge and a second long edge are arranged to face each other across the small diameter opening, and each long edge is in a shape of a mountain that rises toward the electron gun.

20 2. The cathode ray tube of Claim 1, wherein

25 the internal magnetic shield is structured such that in terms of a height of the internal magnetic shield from a plane that is perpendicular to a tube axis of the cathode ray tube and includes a point at an intersection of an inner surface of the panel with the tube axis, tops of the long edges in the shape of the mountain have a largest height, points where long edges meet short edges have a smaller height than the tops of the long edges, and bottoms of the short edges in the shape of the valley

have a smaller height than the points where the long edges meet the short edges.

3. The cathode ray tube of Claim 2, wherein

5 at a rim of the small diameter opening, the height of the internal magnetic shield from the plane decreases gradually from the tops of the long edges to the bottoms of the short edges.

4. The cathode ray tube of one of Claims 1 to 3, wherein

10 the shape of the valley is symmetrical on either side of a center of each of the first and second short edges, and the shape of the mountain is symmetrical on either edge of a center of each of the first and second long edges.

15 5. The cathode ray tube of one of Claims 1 to 4, wherein

each short edge is continuous to each long edge at each end thereof.

6. The cathode ray tube of one of Claims 1 to 5, wherein

20 each of the first and second short edges is in a shape of an inverted trapezoid, a character "U", a character "V", or an arc as the shape of the valley, and each of the first and second long edges is in a shape of an obtuse-angled isosceles triangle as the shape of the mountain.

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7. The cathode ray tube of one of Claims 1 to 6, wherein

a first long edge plate including the first long edge and a second long edge plate including the second long edge are

arranged to face each other, and a first short edge plate including the first short edge and a second short edge plate including the second short edge are arranged to face each other, so that the internal magnetic shield is substantially in the shape of

5 the hollow truncated pyramid, and

each of the first and second long edge plates has a slit that extends from a center of each of the first and second long edges toward the panel.

10 8. The cathode ray tube of one of Claims 1 to 7 further comprising:

a rectangular frame that supports the internal magnetic shield at an end of the internal magnetic shield where a large diameter opening is formed; and

a tension mask that is supported by the rectangular frame,

15 wherein

a phosphor screen, which is composed of red, green, and blue phosphors that are arranged to form vertical stripes, is formed on the inner surface of the panel.